In the claims:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (currently amended) A device for irradiating tissue having absorption characteristics, comprising:

a fluorescent element positioned to receive pump radiation from a laser having a narrow spectral band and responsively generate radiation by spontaneous emission, the spontaneously emitted radiation being diffuse and having peak emission outside said narrow spectral band, and at least a portion of which emitted radiation matches said absorption characteristics; and

the fluorescent element ~~being adapted to deliver~~ delivering at least a portion of the diffuse emitted radiation toward a tissue target for treatment of said tissue, said portion having sufficient fluence for therapeutic effect.

2. (previously presented) The device of claim 1, wherein the fluorescent element comprises a fluorochromes dispersed in a solid medium.

3. (original) The device of claim 2, wherein the fluorescent substance includes fluorescent ions, and the solid medium is selected from a group consisting of a solid-state crystal and a glass.

4. (original) The device of claim 2, wherein the fluorescent substance includes a fluorescent dye, and the solid medium is selected from a group consisting of a polymer and a glass.

5. (original) The device of claim 4, wherein the solid medium comprises a polymer selected from a group consisting of polymethyl methacrylate (PMMA) and polyvinyl toluene (PVT)

6. (currently amended) A device for irradiating tissue, comprising:

a fluorescent element positioned to receive pump radiation having a narrow spectral band and responsively generate radiation by spontaneous emission, the spontaneously emitted radiation being diffuse and having peak emission outside said narrow spectral band; and

the fluorescent element ~~being adapted to deliver~~ delivering at least a portion of the diffuse emitted radiation toward a tissue target, wherein the fluorescent element comprises a liquid fluorescent dye solution.

7. (original) The device of claim 6, wherein the dye solution is static.

8. (original) The device of claim 6, wherein the dye solution is continuously pumped through the fluorescent element.

9. (previously presented) The device of claim 1, including a diffuse reflector for redirecting at least a portion of the diffuse emitted radiation toward the tissue target.

10. (currently amended) A device for irradiating tissue, comprising:

a fluorescent element positioned to receive pump radiation having a narrow spectral band and responsively generate radiation by spontaneous emission, the spontaneously emitted radiation being diffuse and having peak emission outside said narrow spectral band, ||; and|| the fluorescent element ~~being adapted~~ to deliver delivering at least a portion of the diffuse emitted radiation toward a tissue target; and ~~including~~

a diffuse reflector for redirecting at least a portion of the diffuse emitted radiation toward the tissue target, wherein the diffuse reflector has a frustro-conical shape.

11. (original) The device of claim 1, wherein the pump radiation is generated by a frequency-doubled solid-state laser.

12. (original) The device of claim 1, wherein the pump radiation is delivered to the fluorescent element through an optical fiber.

13. (original) The device of claim 1, wherein the pump radiation is delivered to the fluorescent element through an articulated arm.

14. (previously presented) The device of claim 1, including a reflective coating configured to reflect the emitted radiation toward the tissue target, the reflective coating being substantially transparent with respect to the pump radiation.

15. (currently amended) A device for irradiating tissue, comprising:

a fluorescent element positioned to receive pump radiation having a narrow spectral band and responsively generate radiation by spontaneous emission, the spontaneously emitted radiation being diffuse and having peak emission outside said narrow spectral band,||; and|| the fluorescent element ~~being adapted to deliver~~ delivering at least a portion of the diffuse emitted radiation toward a tissue target; and ||, further comprising||

a substantially transparent window having a proximal face positioned adjacent to the fluorescent element and a distal face for contacting the target.

16. (original) The device of claim 15, further comprising means for cooling the window.

17. (previously presented) A device for irradiating tissue, comprising:

a fluorescent element positioned to receive pump radiation and responsively generate radiation by spontaneous emission, the spontaneously emitted radiation being diffuse and having substantially different spectral characteristics with respect to the incident radiation; and

a redirector for redirecting at least a portion of the diffuse, spontaneously emitted radiation toward a tissue target, wherein the redirector comprises a waveguide including a reflective entrance face and reflective walls, the entrance face having a substantially transmissive aperture formed therein for admitting pump radiation into the waveguide.

18. (original) The device of claim 17, wherein the reflective walls comprise a boundary between a waveguide core having a relatively high index of refraction and a cladding material having a relatively low index of refraction, the boundary causing total internal reflection of a portion of the emitted radiation.

19. (original) The device of claim 17, wherein the reflective walls comprise a reflective coating.

20. (original) The device of claim 17, wherein the reflective walls comprise a metallic coating.

21. (original) The device of claim 17, wherein the reflective walls comprise a dielectric coating.

22. (currently amended) A method for irradiating tissue having absorption characteristics, comprising:

directing pump radiation within a narrow spectral band from a laser onto a fluorescent element;

responsively generating radiation by spontaneous emission at the fluorescent element, the spontaneously emitted radiation being diffuse and having peak emission outside said narrow spectral band of the radiation, and at least a portion of which emitted radiation matches said absorption characteristics; and

delivering at least a portion of the diffuse emitted radiation to a tissue target for treatment of said tissue, said portion having sufficient fluence for therapeutic effect.

23. (original) The method of claim 22, wherein the step of directing incident radiation onto the fluorescent element includes directing incident radiation through an optical fiber.

24. (previously presented) The method of claim 22, wherein the step of delivering includes receiving a portion of the emitted radiation at a redirector; and

redirecting the received portion of the diffuse emitted radiation by reflecting the emitted radiation from a diffuse reflector toward the tissue target.

25. (previously presented) The method of claim 22, wherein the step of delivering includes receiving a portion of the emitted radiation at a redirector; and

redirecting the received portion of the diffuse emitted radiation by reflecting the emitted radiation from a reflective coating, the reflective coating being substantially transparent with respect to the pump radiation.

26. (previously presented) A method for irradiating tissue having absorption characteristics, comprising:

directing pump radiation onto a fluorescent element;

responsively generating radiation by spontaneous emission at the fluorescent element, the spontaneously emitted radiation being diffuse and having spectral characteristics substantially different from the incident radiation, and at least a portion of which emitted radiation matches said absorption characteristics;

receiving a portion of the diffuse, spontaneously emitted radiation at a redirector; and

redirecting the received portion of the emitted radiation toward a tissue target for treatment of said tissue, wherein the step of redirecting the emitted radiation includes reflecting the emitted radiation from the boundary between a waveguide core and cladding material, the cladding material having a substantially lower index of refraction than the waveguide core, said portion having sufficient fluence for therapeutic effect.

27. (original) The method of claim 22, wherein the tissue target comprises a vascular lesion.

28. (original) The method of claim 22, wherein the tissue target comprises a tumor.

29. (original) The method of claim 22, wherein the tissue target comprises hair.

30. (original) The method of claim 22, wherein the tissue target comprises a pigmented lesion.

31. (original) The method of claim 22, further comprising the steps of cooling the tissue target.

32. (original) The method of claim 31, wherein the step of cooling the tissue target comprises:

providing a substantially transparent and thermally conductive window;

placing a face of the window in thermal contact with the tissue target; and

cooling the window.

33. (currently amended) A system for irradiating tissue having absorption characteristics, comprising:

a pump radiation source for generating pump radiation from a laser having a narrow spectral band;

a fluorescent element positioned to receive the pump radiation and responsively generate radiation by spontaneous emission, the spontaneously emitted radiation being diffuse and having

peak emission outside said narrow spectral band, and at least a portion of which emitted radiation matches said absorption characteristics; and

a redirector for redirecting at least a portion of the diffuse emitted radiation toward a tissue target for treatment of said tissue, said portion having sufficient fluence for therapeutic effect.

34. (Canceled).

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